

## **TOP SECRET**

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FM WPIG

**AFSSO PACAF  
AFSSO ACIC  
AFSSO FTD  
AFSSO USAFE  
CNS  
OPCOM**

19 APR 1966

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TOP SECRET

CITE MPIC 6944.

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**SUBJECT: CAMERA INFORMATION FOR MISSION 1931-1.**

1. THE MISSION UTILIZED TWO PAN CAMERAS, FOUR HORIZON CAMERAS, A STELLAR CAMERA, AND AN INDEX CAMERA.

## 2. CAMERA DATA

A. MAIN UNITS	FORWARD	APT	STAR NOR	PORT NOR
FOCAL LENGTHS (MM)	689.577	689.692	FWD 55.00	FWD 55.00
			AFT 54.98	AFT 49.98
FILTER (WRATTEN NR)	23A	21	25	25
APERTURE	F3.5	F3.5	F8.0	F6.3
SLIT WIDTH (IN)	.225	.150	1/100	1/100
EXPOSURE (SEC)				
FILM	3484	3484	3484	3484
RESOLUTION (L/MM)	185	199	N/A	N/A
B. S/I UNITS	STELLAR	INDEX		
FOCAL LENGTH (MM) PART I	84.8713	38.3232		

145

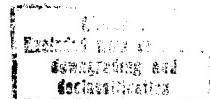
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	PART 2	NA	NA
FILTER (WRATTEN NR)		NONE	21
APERTURE		F1.8	F4.5
EXPOSURE (SEC)		2.0	1/500
FILM		3401	3400
RESOLUTION (L/MM) PART 1			72
	PART 2		72
UNIT NUMBER	PART 1	D83/101/89	
	PART 2	D86/106/86	

### 3. LENS DISTORTION (PIN CUSHION) MM

A. MAIN UNITS	3	2	1	0	359	358	357
FWD UNIT	.002	.001	.000	.000	.000	.001	.001
AFT UNIT	.003	.004	.002	.000	.001	.003	.005
B. HORIZON CAMERAS (MM)					FWD	AFT	
	PORT	STAR	PORT	STAR			
(RADIAL) 10 DEGREES	.050	.010	.020	.010			
20 DEGREES	.100	.030	.070	.030			
(TANGENTIAL) MAX VECTOR	.020	.025	.025	.030			

### 4. CAMERA ANGLES DEG. MIN.

A. ANGLE BETWEEN PAN CAMERAS		29	46.10
B. DEPRESSION ANGLE BETWEEN HORIZON AND PAN CAMERAS	FWD STAR	15	32.0
	FWD PORT	14	58.7
	AFT STAR	15	30.3
	AFT PORT	15	13.5

C. ANGLE BETWEEN STELLAR AND PART 1 90 02.5  
 INDEX CAMERAS PART 2 NA NA

### 5. TIMING MARKS

FREQUENCY MARKS WILL APPEAR ON THE FILM AT A RATE OF 200 CYCLES PER SECOND.

### 6. IMAGE MOTION COMPENSATION DATA (CYCLE RATE(CPS), GROUND ANGULAR VELOCITY (GAV), AND PASSES WHERE USED).

REF. LEVEL			AMPL. LEVEL			PASSES
NO.	CPS.	GAV.	NO.	CPS.	GAV.	
7	.3484	.0308	6	.0816	.0074	1D1 THRU 7D2
6	.3582	.0324	7	.0642	.0058	8D1 THRU 62D1
6	.3582	.0324	5	.0963	.0057	65D1 THRU 111D1

### 7. PROGRAM TIME DATA

PASS	CAMERA ON TIME				PROGRAM ON TIME		PROGRAM
	(ZULU TIME)				UP RAMP	DURATION	
	DAY	HR	MIN	SEC	SEC	SEC	
1D1	7	23	31	28	1337	41	
5D1	7	05	25	37	1084	163	
6D1	8	06	53	52	1001	158	
6D2	8	07	06	22	1752	145	
7D1	8	08	29	20	1352	192	
7D2	8	08	32	13	1525	113	
8D1	8	09	55	14	1024	43	
8D2	8	09	59	46	1296	130	
9D1	8	11	07	19	94	48	

10D1	8	13	94	87	1681	182
11D1	8	14	38	86	1878	189
14D1	8	19	14	47	2348	55
16D1	8	22	96	39	1549	38
17D1	8	23	17	91	747	65
22D1	9	86	52	16	1192	39
22D2	9	87	86	89	1664	259
23D1	9	88	24	27	1350	37
27D1	9	14	27	89	1619	87
28D1	9	15	43	43	849	127
30D1	9	19	87	28	2319	49
31D1	9	20	27	33	1751	71
32D1	9	21	54	86	1571	38
37D1	10	85	89	59	852	292
37D2	10	85	22	21	1683	28
38D1	10	86	45	36	1226	39
38D2	10	86	51	54	1684	182
39D1	10	88	16	41	1320	231
41D1	10	11	15	25	1299	182
43D1	10	14	22	53	1885	93
48D1	10	21	47	89	1683	38
49D1	10	23	83	39	813	50

49D2	10	23	96	28	991	124
50D1	11	98	35	26	958	166
52D1	11	93	33	50	919	122
54D1	11	96	38	32	1259	46
54D2	11	96	46	23	1731	86
55D1	11	98	19	91	1378	199
56D1	11	99	37	54	1288	165
61D1	11	17	23	33	2379	48
62D1	11	18	52	58	2364	48
65D1	11	22	59	89	1086	132
68D1	12	93	32	18	1366	213
69D1	12	95	25	48	1686	173
71D1	12	97	59	52	1314	224
71D2	12	98	12	11	2853	63
72D1	12	99	29	56	1349	145
74D1	12	12	38	35	1929	99
74D2	12	12	42	58	2184	93
79D1	12	20	92	20	1719	39
84D1	13	93	23	93	1314	155
86D1	13	96	25	13	1588	145
87D1	13	97	48	23	1132	579
93D1	13	16	44	98	1079	67
95D1	13	19	53	43	1714	39
97D1	13	22	43	57	1196	86
100D1	14	93	18	11	1549	96

101D1	14	04	46	18	1470	61
101D2	14	04	53	33	1905	59
102D1	14	06	16	02	1488	101
103D1	14	07	40	06	1166	44
103D2	14	07	43	41	1381	371
104D1	14	09	12	26	1339	284
105D1	14	10	41	27	1315	48
105D2	14	10	43	53	1461	150
111D1	14	19	46	44	1805	25

**NOTE: MISSION 1031 IS THE FIRST SYSTEM HAVING THE FIXED-TIME DELAY CIRCUIT ON (SLAVE) AFT PAN CAMERA OPERATIONS. THIS CIRCUIT DELAYS THE START UP AND SHUT DOWN OF THE (SLAVE) AFT PAN CAMERA FOR TWELVE SECONDS AFTER START UP AND SHUT DOWN OF THE (MASTER) FWD PAN CAMERA. THEREFORE, TO OBTAIN FOR THE (SLAVE) AFT CAMERA ONLY THE CORRECT CAMERA ON TIME IN HOURS, MINUTES, AND SECONDS AND THE CORRECT PROGRAM ON TIME UP THE RAMP FOR EACH OF THE PASSES LISTED ABOVE ADD TWELVE (12) SECONDS TO THESE TIMES. THE PROGRAM DURATION TIME REMAINS THE SAME FOR (MASTER) FWD AND (SLAVE) AFT UNITS.**

#### 8. TIME CORRELATION (MILLISECONDS)

PASS	CLOCK TIME	SYSTEM TIME	DIFFERENCE
9	120214.586	40099.6833	-----
16	159425.683	79318.7938	MINUS .024
25	206262.125	39747.2532	PLUS .983

32      245448.743      78933.8867      MINUS .016  
41      292259.221      39344.3845      MINUS .019  
48      331446.544      78331.7251      MINUS .018  
57      378247.271      38932.4743      MINUS .022  
73      464227.670      38489.1451      -----  
79      497946.250      72198.7457      PLUS .879  
89      913299.983      38922.5163      MINUS .025  
95      946988.636      71712.0818      MINUS .012  
105     999213.656      37537.1149      MINUS .013  
111     132931.349      71254.8833      PLUS .896

T O P S E C R E T

/END OF MESSAGE/

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